MASSACHUSETTS WETLANDS RESTORATION NEWS

Wetlands Restoration & Banking Program **Massachusetts Executive Office of Environmental Affairs**
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New Wetlands Program Launched!

Massachusetts has lost more than 28% of its wetlands since Colonial times. Despite a strong wetlands permit program, hundreds of acres of Massachusetts wetlands are lost and degraded each year due to site-specific and cumulative impacts of human activities.

Secretary Trudy Coxe of the Executive Office of Environmental Affairs (EOEA) believes we can, and must, reverse this process. To further implement the state's policy of "no net loss of wetlands in the short-term and a net gain in the long-term", Secretary Coxe established the **Wetlands Restoration & Banking Program (WRBP)** in her office in March, 1994.

During its first year, WRBP has been actively pursuing its two-part mission: 1) to restore proactively the state's degraded and destroyed wetlands and 2) to explore whether wetlands mitigation banking can improve mitigation success for unavoidable, permitted wetland losses.

Proactive Wetlands Restoration

The principles underlying "proactive wetlands restoration" are 1) an ecosystem rather than a site-by-site approach, 2) a commitment to support grassroots goals for restoration, 3) application of best-available science, 4) integration of wetlands restoration with other water resources management activities, and 5) a conviction that we can accomplish more through partnerships with others than we can alone.

WRBP is preparing inventories of wetlands restoration sites that can contribute to overall ecologic improvement of the state's watersheds and coastal areas. These site lists serve as a basis for seeking restoration project funding. Communities and citizen groups set priorities for implementing individual restoration projects based on overall goals for the watershed or coastal area. Several inventories are already underway or in the planning stages including Cape Cod, coastal North Shore, and the Neponset and Connecticut River valleys. *[Please see Page 4 for details.]*

WRBP is working with the Department of Environmental Protection's Office of Watershed Management to coordinate restoration with their watershed-based monitoring, permitting, enforcement and grant-making activities. Scientific protocols for wetlands site selection are under development. *[See Page 2 for details.]* A coalition of agencies, organizations and individuals, the "Partnership to Restore Massachusetts Wetlands", will meet this spring to finalize a coordinated statewide Action Plan. *[See Page 3 for details.]*

Wetlands Mitigation Banking

Wetlands mitigation banking is defined as "a system in which the creation, enhancement, restoration or preservation of wetlands is recognized by a regulatory agency as generating compensation credits allowing the future development of other wetland sites." Therefore, a primary advantage of mitigation banking over the current system is the establishment of mitigation prior to impacts to wetlands rather than after the fact.

Wetlands mitigation banking has been controversial elsewhere in the country. To ensure that the pros and cons are carefully weighed, Secretary Coxe appointed *[Continued on next page.]* an Advisory Committee (AC) in May 1994. The AC is developing recommendations regarding the value of wetlands mitigation in improving mitigation success and expects to issue its report and recommendations sometime this spring. *[For more on banking, see Page 5.]*

WRBP Logo Contest!

You must agree, our masthead looks bare! Please help us shape our "identity". WRBP will select the most appropriate and imaginative logo you submit. The designer will be identified in all future issues of Wetlands Restoration News. Submit only camera-ready art work no larger than 4"x 4", by May 1, 1995.

"Wetlands Restoration" Defined

WRBP has been located in the office of the Secretary to ensure that its activities are integrated with those of all the EOEA agencies including Coastal Zone Management, Department of Environmental Management, Department of Environmental Protection, Department of Food & Agriculture, Department of Fisheries, Wildlife & Environmental Law Enforcement, Metropolitan District Commission, Buzzards Bay Program, Massachusetts Bay Program, and Division of Conservation Services.

The WRBP Steering Committee, comprised of representatives of each EOEA office, have developed the following definition for "wetlands restoration" as it is to be implemented by the new program:

For purposes of the Massachusetts Wetlands Restoration & Banking Program (WRBP), wetlands restoration is the act, process, or result of returning a wetland or a former wetland to a close approximation of its condition prior to disturbance.

The definition is part of a document developed by the Steering Committee that provides restoration examples and other general guidance. A copy of the complete document can be found on Page 6 of this newsletter.

WRBP Staff Profiles

WRBP is directed by Christy Foote-Smith who served as Director of the Department of Environmental Protection, Division of Wetlands & Waterways for four years and Deputy Director for four years. From 1981-1986 Christy was Executive Director of the Massachusetts Association of Conservation Commissions.

In October 1994, Ralph Tiner joined WRBP as Wetland Scientist. Since 1977 Ralph has headed up the National Wetlands Inventory for the U.S. Fish & Wildlife Service, Region 5. He helped compile the federal interagency wetland delineation manual. Ralph is the author of numerous books and articles covering a range of topics including wetland plants, hydric soils, and wetlands mapping. He is an adjunct professor at the University of Massachusetts Amherst. Ralph continues with the Fish & Wildlife Service for two days a week and works at WRBP three days a week.

WRBP Stresses Strong Science Base

While the Commonwealth has an urgent need to counter historic wetlands losses with an aggressive restoration effort, WRBP Director Christy Foote-Smith is emphasizing program implementation based on the best available scientific information. "The science of wetlands restoration is still developing and we don't have a lot of in-state experience," Foote-Smith noted. "It isn't my intention to delay our efforts. There are some wetlands that are obvious candidates for restoration and we should begin there. At the same time I want to make sure the wetlands restoration projects undertaken by this program have the best chance of improving our wetlands, our watersheds, and our coastal ecosystems," she added.

The Army Corps of Engineers is assisting WRBP in developing a methodology for identifying wetlands restoration sites that will improve watersheds and coastal ecosystems overall. This study also will develop measures of success and monitoring protocols for wetlands restoration projects. "WRBP is one of the first wetlands restoration programs in the country to adopt
[Continued on next page.]
an ecosystems approach," Foote-Smith advised.

A Science Peer Review Committee chaired by Dr. Joseph Larson of the University of Massachusetts Amherst, Environmental Institute, has been appointed to review the methodology developed by the Corps and to advise WRBP generally regarding wetlands science issues. Other members are Dr. John Teal, Woods Hole Oceanographic Institute, Dr. Arnold O'Brien, U.Mass. Lowell, Dr. Curt Griffin, U. Mass. Amherst, Dr. Tom Stevens, Ralph Tiner, U.S. Fish & Wildlife Service, Frank Smgelski, Army Corps of Engineers, and Dennis Lowry, Fugro East.

The wetlands restoration site selection ~~methodology will be finalized this spring. The~~ method will be applied on a pilot basis in the Neponset and Connecticut River watersheds this summer and fall.

According to Ralph Tiner, WRBP Wetland Scientist, "WRBP will start out on a strong science footing and we'll continue to learn as we go. Every restoration project will teach us more. We'll be maintaining a data base of information about wetlands restoration that will be available to anyone who needs it."

State/Fed Adopt Joint "Resolution to Restore"

On June 1, 1994, Secretary of Environmental Affairs Trudy Coxe was joined by officials from the U.S. Departments of Agriculture, Commerce, Army, Transportation and EPA, and the Massachusetts Executive Office of Transportation and Construction, in signing a "Resolution to

Restore Massachusetts Wetlands". The ceremony took place on top of Sagamore Hill overlooking Sagamore Marsh, a 250-acre degraded former salt marsh which the Army Corps of Engineers and Commonwealth wish to restore as the state's first project under the Coastal America Partnership, a federal program aimed at facilitating restoration of coastal wetlands through joint federal agency action. *[See adjacent article.]* The Resolution is a commitment by the agencies to work together to restore the degraded and destroyed inland and coastal wetlands of the Commonwealth. *[See Page 8 for the full text of the "Resolution".]*

That afternoon, public agencies and interest groups met to begin developing an Action Plan for implementing the Resolution. The participants agreed on an ecosystem approach to selecting wetlands restoration sites so that restoration activities can contribute to improving the overall health of watersheds and coastal areas. Also, they concurred that an effective statewide program will require the combined efforts of many "partners". WRBP was asked to develop a draft Action Plan implementing the goals adopted by the new "Partnership to Restore Massachusetts Wetlands".

WRBP is planning the "First Annual Meeting of the Partnership to Restore Massachusetts Wetlands" in May 1995 for agencies, organizations and individuals who wish to contribute to implementing the Action Plan. Please fill out the form on Page 5 of this newsletter and return to WRBP if you wish to receive information about the conference.

Corps, EOEA Study Sagamore Marsh Restoration

At the request of the Executive Office of Environmental Affairs and in cooperation with WRBP, the Army Corps of Engineers is studying the feasibility of restoring up to 250 acres of former salt marsh behind Scusset Beach State Beach in Bourne and Sandwich. The area has gradually degraded to a marsh dominated by Phragmites australis, an invasive plant species, since alterations made to the Cape Cod Canal in the 1930s. The opening to the marsh through Scusset Beach silted in cutting off tidal flushing to the marsh except through a small culvert opening into the canal.

The Corps proposes to restore the marsh by increasing the size of the culvert to bring in tidal waters. The increased salinity will cause gradual die-back of the Phragmites and allow salt marsh plants to reestablish. The Corps is preparing and Environmental Assessment under NEPA and an Environmental Impact Report under MEPA to ensure there will be no adverse impact to a nearby public water supply well and residential properties abutting the marsh.

If the restoration is found to be feasible, the Army Corps will pay 75% of total project cost and the state *[Continued on next page.]*
will pick up the balance. WRBP hopes to raise much of the state's 25% share of the estimated project cost of $2.7 million from grants and private sources.

Once restored, Sagamore Marsh would be the largest salt marsh on or near the Cape and would contribute significantly to restoring fisheries and the quality of coastal waters. Recognizing these benefits, the Coastal America Partnership, a coalition of federal agencies supporting coastal wetlands restoration, designated Sagamore Marsh restoration a priority project.

Highway Impacts on Cape Studied

A coalition of agencies is developing an inventory of coastal embayments on Cape Cod dominated by degraded wetlands where the degradation is caused principally by tidal flow restrictions associated with transportation crossings. In 1993 the Cape Cod Commission requested funding from the Army Corps of Engineers to study salt marsh degradation associated with transportation

projects. Coastal Zone Management and WRBP joined the request for funding under the Corps' Section 22 Planning Assistance to States Program which requires a 50% state match.

Upon receiving the recommendation of the Massachusetts Water Resources Commission and the Secretary of Environmental Affairs, the Corps agreed to conduct the $100,000 study if the state could raise its $50,000 share. At WRBP's request, the Executive Office of Transportation and Construction (EOTC) agreed to provide $50,000 for the study and to join the study team.

The Corps will study wetland degradation where tidal restriction has reduced soil salinity, creating ideal conditions for the spread of Common Reed (Phragmites australis) which reduces the area of scarce, higher value estuarine habitat. The study will develop a list of sites that have the potential for restoration through highway design modifications such as increased culvert size. The Corps will perform additional screening at six sites and preliminary design work at two sites. The Massachusetts Highway Department will incorporate the modifications when they are upgrading the roadways. Study completion is expected during 1995.

WRBP Stormwater Project

Under a grant from EPA, WRBP will study the impacts of stormwater on the wetlands of two watersheds. WRBP will compare SCS soil survey maps showing the location of hydric soils to maps of existing wetlands (National Wetlands Inventory or Wetlands Conservancy Maps, depending on availability) to determine the location of hydric soils where no wetland is present. These are very likely the locations of former wetlands. Where available, present and historic wetland maps will be compared. Field surveys will be conducted to evaluate restoration potential of the former wetlands.

In addition, locations of stormwater discharge pipes will be identified. Field surveys will be conducted to determine proximity to wetlands and whether wetlands degradation has occurred. Based on this information, a restoration plan for the watershed will be developed. In addition, measures to prevent future wetlands degradation associated with stormwater discharges will be recommended. WRBP is in the process of selecting watersheds for these studies.

North Shore Coastal Wetlands Targeted for Restoration

WRBP plans to use aerial photography to develop an inventory of degraded coastal wetlands along the coastline north of Boston. Tracts of Phragmites australis are readily identifiable as potential restoration areas, especially when associated with roadways and other obstructions to tidal flows. An atlas of maps will be prepared and presented to town officials and environmental groups. WRBP will assist in obtaining funding to restore the identified sites.

WRBP Welcomes Articles

Readers are welcome to submit articles on appropriate topics for publication in **Wetlands Restoration News**. Book reviews, articles, calendar events, news, scientific information, and restoration project summaries are welcome. Send material to: WRBP/EOEA, 100 Cambridge Street, Boston, MA 02202.

Wetlands Mitigation Banking

Within the last decade an alternative approach to onsite compensatory mitigation has begun to emerge: wetland mitigation banking. In wetland mitigation banking, larger off-site wetland areas are created or restored to provide mitigation for a number of independent wetland impacts. The developer itself need not produce the

compensatory wetlands; instead, the developer can purchase them from another entity that has produced and "banked" them for this purpose. The banked "compensation credits" are recognized by the regulatory agency as providing suitable compensation for wetland impacts.

Wetland mitigation banking may provide greater ecological benefits than on-site, project-specific mitigation. Because banking mitigates for numerous individual wetland conversions, compensation sites are likely to be larger and more likely to be viable hydrologically and biologically. In addition, banked compensation wetlands can achieve functional success in advance of the wetland impacts for which they are to mitigate; and they can be continuously monitored and managed to assure the continuing production of the wetland functions at issue. Wetland mitigation banking offers potential efficiencies and economies of scale, and may offer continuing professional wetland management rather than ad hoc management by the development entity that ends after the project is complete.

A 1992 national inventory conducted by the Army Corps of Engineers, Institute for Water Resources, identified 46 existing and actively operating wetlands mitigation banks in 17 states with an additional 64 more in the planning stages. Nearly seventy-five percent of the existing banks provided mitigation for public works projects, 26 specifically for highway projects. Only one private bank was offering credits for commercial sale. However, 15 proposed "entrepreneurial" banks were in the works at that time.

In its 1988 report Protecting America's Wetlands - An Action Agenda (Conservation Foundation), the National Wetlands Policy Forum established the policy of "no net loss" of wetlands and specifically advocated the establishment of banking as an important implementation tool. President Clinton's August 24, 1993, wetlands policy, Protecting America's Wetlands: A Fair, Flexible, and Effective Approach, adopts wetlands mitigation banking as a reform to be applied specifically "when compensatory mitigation is not appropriate, practicable, or as environmentally beneficial at the development site." The policy emphasizes that any compensatory mitigation, including banking, should be implemented in the context of "sequencing" where the developer must first demonstrate that impacts to wetlands have been avoided, then minimized, prior to consideration of compensatory mitigation measures.

According to the 1989 Corps of Engineers study Evaluation of Freshwater Wetland Replacement Projects in Massachusetts, the state has experienced a mitigation project failure rate of 36%. Massachusetts is presently considering whether mitigation banking could improve mitigation success for some projects. In May, 1994, EOEA Secretary Trudy Coxe appointed the Wetlands Restoration & Banking Program Advisory Committee (AC) to explore the feasibility of wetlands banking for the state. The AC is comprised of representatives from the development, academic and environmental communities along with state and federal agencies, and is chaired by WRBP Director Christy Foote-Smith. The AC expects to issue its report and recommendations later this spring. At present the AC is considering one or two "pilot" banks and simultaneously examining other strategies for improving mitigation success.

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Please add my name to your mailing list to receive information about the June 1995 "First Annual Meeting of

the Partnership to Restore Massachusetts Wetlands".

Name_____Affiliation_____

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Address_____

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Return to: WRBP / Executive Office of Environmental Affairs, 100 Cambridge Street, Boston, MA 02202

WETLANDS RESTORATION DEFINED

Wetlands Restoration: *For purposes of the Massachusetts Wetlands Restoration & Banking Program (WRBP), wetlands restoration is the act, process, or result of returning a wetland or a former wetland to a close approximation of its condition prior to disturbance.*

Types of Wetlands Restoration: Given the wide range of activities meeting this definition, wetlands restoration should be classified based on the intended purpose of the restoration project: Type 1 Restoration - reestablishing a wetland in a former wetland site that is presently non-wetland, and Type 2 Restoration - returning a damaged, degraded, or otherwise functionally impaired wetland to its prior (pre-disturbance) condition or a one similar to it. Type 1 restorations result in an increase in wetland acreage by recreating a wetland at the site of a former wetland (historic wetland). Type 2 restorations cause a change in the type or condition of an existing wetland, typically with no gain in wetland acreage. Type 2 restorations are, therefore, more qualitative changes that attempt to return the condition and functions of an altered wetland to those that existed prior to disturbance. Restoration projects may involve both types of restoration.

General Aims and Components of Wetlands Restoration: Wetlands restoration seeks to restore prior wetland functions, including water quality improvement, flood storage and flood protection, and fish, shellfish, and wildlife habitat. The basic components of wetlands restoration are: (1) restoring hydrology (e.g., through improved culvert sizing and eliminating flow restrictions), (2) restoring substrate characteristics (e.g., removal of fill, reestablishing original topography and physical configuration, and returning hydric soils), (3) reestablishing native biota (e.g., controlling exotic / invasive species and reintroducing native or other ecologically beneficial vegetation through seeding and plantings), and (4) restoring the chemical integrity (e.g., by reducing pollutants, eliminating contamination sources, and returning sufficient salt water to degraded salt marshes). These components are not mutually exclusive since manipulation of one of these components often affects another. Restored wetlands should be persistent and self-sustaining.

The following activities are not considered ~~proactive~~ wetlands restoration: (1) conversion of vegetated wetland to open water for recreation, livestock watering or aesthetics, (2) armoring river, stream, or coastal banks with rip-rap or gabions for flood and erosion control, and (3) any action taken to comply with water quality control and other applicable regulations and policies (e.g., removing unauthorized fill from a wetland per state order to comply with state regulations or compensatory mitigation). Wetlands creation differs from restoration in that it is the construction of a wetland at a site that was never wet enough to support a hydrophytic plant community. Creation projects are not considered wetlands restoration, although restoration projects may involve some wetland creation. There are varying definitions of wetland enhancement. WRBP supports wetland enhancements only if they meet the definition for wetlands restoration.

General Guidance: The Wetlands Restoration & Banking Program and its advisory committees have adopted

the terms "compensatory mitigation" and "proactive restoration" to distinguish between two purposes for wetlands restoration. Compensatory mitigation is wetlands restoration required by a permit or a regulatory enforcement action. Proactive wetlands restoration is performed simply and solely to restore one or more wetland functions for the benefit of society and the natural environment. Wetlands restoration projects must comply with the requirements of applicable wetlands laws and regulations. Projects that require variances should only be considered and pursued where there is an overriding public interest and a significant environmental gain.

WRBP supports a holistic approach to wetlands restoration that requires consideration of the regional context for wetlands restoration, especially factors contributing to wetland loss and degradation in the watershed. WRBP encourages the development of regional (watershed or other ecologic unit) wetlands restoration plans that set forth regional goals for wetlands functions to be restored (such as water quality or wildlife habitat improvements). Restoration projects should strive for the permanent return of wetland functions and public benefits. Consequently, Massachusetts should favor projects on public lands and projects with perpetual easements on private property over restoration projects with short-term easements.

February 1995

Wetlands Restoration Projects Sought

Several important sources of funding for wetlands restoration projects are underutilized. WRBP is seeking appropriate inland and coastal candidate sites. WRBP will assist in identifying and applying for appropriate funding. Please fill out the form below or call 617-727-9800 x213.

MASSACHUSETTS WETLANDS RESTORATION & BANKING PROGRAM

WETLANDS RESTORATION SITE SURVEY

The Wetlands Restoration and Banking Program (WRBP) needs your help!

To decide where limited resources will have the greatest impact, we need to know about: 1) restoration efforts that have already taken place or are underway so we can learn from past successes (and mistakes!) and 2) wetlands that have been destroyed or degraded that could be restored. If you have such information, please fill out the following brief survey (one for each project reported) and return to the address below.

Your Name: **Your phone #:**

Town where wetland or former wetland is located:

Wetland restoration work (check one): ___ needs to be done ___ is already completed or under way

Brief description of the area, it's condition, and the work needed to restore it:

Mail to: **Christy Foote-Smith, Director**
Wetlands Restoration & Banking Program
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202
(617) 727-9800 x213

★ ★ ★ THANK YOU VERY MUCH ★ ★ ★